

**Appendix G: Supplemental Scopes of Work**

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**Appendix G.1****GEOTECHNICAL INVESTIGATIONS****1. General**

When geotechnical investigations are required by the Statement of Work, such information shall be obtained by a competent and reputable firm specializing in such work and satisfactory to FD&CC. Adequate information shall be obtained for use by designers of structures, grading, drainage, disposal fields, and other features.

Generally, prior to negotiation of contract, the A/E will furnish to the KO recommendations as to the extent and type of foundation investigation he proposes. Scope of these services agreed upon will become a part of the contract. A/E shall include cost of this investigation in his total fee proposal.

After completion of the field investigations and laboratory analysis, the A/E shall discuss the results with FD&CCPAC specialists in foundation and materials design. The A/E shall utilize pertinent geotechnical details and design criteria in his design analysis, drawings, and specifications.

**2. Deliverables**

Deliverables, shall include the following:

- Geotechnical Report including a narrative of the extent of the investigation, findings and recommendations stamped by an engineer licensed for geotechnical engineering in the State in which the work was performed.
- A site plan mylar on which the exploration of locations and boring logs will be shown. The site plan shall show the topography and the coordinate grid. On large projects, the A/E will insert the separate boring log sheet into the final plan set.
- Boring log numbers, log profiles, and boring locations.

**Appendix G.2****SITE SURVEYS****A. General**

All surveying and mapping work will be accomplished by personnel licensed in such work. The A/E will inform EIC of his proposed methods, procedures, and type of equipment to be used, and work will be subject to inspection by government personnel. However, the A-E will retain responsibility for quality of work within limits prescribed in the SOW.

Generally type of work, extent, and accuracy requirements will be prescribed in a government-furnished SOW for each specific project. When specific instructions are not furnished, the following will apply.

**1. Control**

Basic mapping control, "P" lines for route surveys, as-built control, and cadastral surveys will be conducted to 3<sup>rd</sup> Order accuracy, both horizontally and vertically, and comply with "Classification, Standards of Accuracy and General Specifications of Geodetic Control Surveys," published by National Ocean Survey. Secondary or supplementary traverses, base lines, or levels may be executed to 4<sup>th</sup> Order grade A accuracy.

**2. General Requirements**

Vertical and Horizontal Control. Reference all vertical control to the North America Vertical Datum 1988 (NAVD 88). Reference all horizontal control to the applicable State Plane Coordinate System or the North American Datums of 1927 (NAD '27) or 1983 (NAD '83). Provide conversion or reference to the National Geodetic Vertical Datum of 1929 (NAVD 1929) and Mean Lower Low Water Datum on the drawing. The shoreline of the Mean Lower Low Water and Mean Higher High Water shall be shown on the site survey drawing. State the basis of the survey drawing.

Construction control. Set a minimum 3 capped and referenced iron pin survey points to serve as initial horizontal and vertical survey control for the construction of the proposed project. Set other referenced survey points as necessary to locate easements property boundaries. The location and elevations of these control monuments shall be shown on the site survey drawings.

Accuracy: Meet National Map standards for horizontal and vertical topographic control. Boundary survey shall comply with applicable State standards for accuracy. Topographic accuracy shall be 0.5 feet for contour lines, 0.1 feet for spot elevations and 0.01 feet for elevations of pipe inverts, manholes, and drainage flow lines.

### 3. Methods

When surveys include legal land surveys or descriptions, work will be accomplished in accordance with bureau of Land Management methods and procedures and state statutes, where appropriate, and by or under supervision of a professional land surveyor holding a current license issued by the state in which work is located. All extension of survey control and mapping accomplished by photogrammetric methods and procedures shall comply with National Map Accuracy Standards.

### 4. Topographic Survey Information

The topographic survey shall record the topography, all existing site features, all aerial and subsurface utilities including fences, roads, railroads, parking areas, walkways, utility lines, and structures within the limits of the site and 50 feet beyond the boundary limits. Indicate roadways and other paving and paving materials. Include locating and showing the existing utilities and associated information required below, outside the areas of the topographic survey, that may be required to provide services for the proposed facility. Abandoned utilities will be shown as they are best known. Indicate vegetation, including general type and size of trees over 3 inches in diameter in the area to be developed. Indicate all tree and brush lines. Spot elevation accuracy shall be within 0.1 feet. Indicate drainage patterns and appurtenances. Topographic site survey drawing shall show the boundaries of the easements. Indicate the following for the noted utilities:

- a) Water: Location, line size (if possible), material and approximate depth. Locate fire hydrants and valves.
- b) Sanitary sewer and storm drainage systems: Location, line size, material and approximate depth of the existing sanitary mains and manholes. Indicate rim elevations and invert in and out for sanitary sewer and storm drain systems. Locate any lift stations, noting invert in and out, pump discharge pressure, flow rate and float switch levels. Identify drainage paths for a distance of 50 feet minimum outside the proposed Coast Guard site with spot elevations. Locate existing drainage channels and identify flow direction.
- c) Heating fuel system: Location, line size and material, tank type (above or below ground) and size and approximate depth of burial. Show vent pipe locations.
- d) Electrical: Location and type of electrical service (above or below ground) with approximate depth of burial, and any transformers and poles in the area. Provide vault elevations.
- e) Telephone: Location, size and type of lines (above or below ground), approximate depth of burial, and location of phone pedestals. Provide vault elevations.
- f) Gas: Location and type of lines, and approximate depth of burial and location of nearest meter box.

- g) Other utilities: Identify cable TV and other utilities present.
- h) Provide the name and telephone numbers of the local utility services

## **B. Deliverables**

Deliverables shall include the following:

### **a. Topographic Drawings.**

Submit printed and electronic copies of the survey as required in the SOW (See Appendix B.1 for standards for electronic drawings). Topographic and planimetric data shall be plotted to prescribed scale and contour interval on mylar film of approved quality; the following will apply:

- a) Existing contours shall be shown with fine, solid line. Every fifth (guide) contour shall be somewhat heavier and periodically broken for insertion of the contour elevation. In general, identification of guide contours shall follow a regular pattern to allow for "easy map reading."
- b) All survey stations, bench marks, designations, elevations, and coordinates are to be shown on topographic drawings in accordance with standard survey record keeping practices.
- c) Buildings and structures shall be shown with solid lines, omitting cross hatching or complete blanking.
- d) Maps and drawings will be so oriented that north will be toward top of sheet, when practicable, or toward left of sheet if top orientation is impractical.

### **b. Field Notes.**

Original field notes and maps, without alteration, will be furnished to FDCCPAC when the survey is completed. Copies all utility maps, computations, aerial negatives, photographs, easements, legal descriptions, records and documents used in the survey shall be submitted in the final submittal to FD&CC. Provide a printed copy of the point file.

**Appendix G.3            HYDROGRAPHIC SURVEYS****A. General**

Hydrographic surveys shall comply with Appendix C.2.

The hydrographic survey shall provide a record of the existing submarine site conditions and features within the limits specified in the Scope of Work. The information shall include the following:

- a) Elevation contours of the basin bottom at contour intervals of one foot.
- b) Identify location of riprap (including top and toe) or any other hard sub-surface features and all significant structures in/over the water (including piles, decking, dolphins, etc.).
- c) Provide the tide information listed below:
  - 1. Mean high water
  - 2. Mean low water
  - 3. Mean higher high water
  - 4. Mean lower low water
  - 5. Highest high water
  - 6. Lowest low water
  - 7. Mean tide level

**B. Deliverables**

See Section D above.

## Appendix G.4 LEAD SURVEYS

### A. General

To safeguard against worker exposure to lead, the A/E shall have a Certified Lead Inspector perform a Total Lead-Based Paint survey on all areas of the project to be renovated or disturbed. The survey methods shall be in accordance with U.S. Department of Housing and Urban Development (HUD) Guidelines for Evaluation and Control of Lead-Based Paint Hazards in Housing, June 1995, and revised in December 1997. XRF analyzers shall be used to measure the lead content of painted surfaces. Spectrum analyzer values between 0.4 and 1.2 mg/cm<sup>2</sup> are inconclusive and require samples to be submitted for laboratory analysis. The number of samples to be taken will vary according to the conditions, but sufficient samples shall be taken to assure that all lead-containing paint that may be disturbed as part of this project is identified and documented. The sample bags or containers shall be sealed and sent to a laboratory certified by the Environmental Lead Laboratory Accreditation Program (ELLAP).

For disposal of lead containing construction debris in projects including total or partial demolition, the A/E designer will also have a Certified Lead Inspector analyze a representative core sampling for Toxicity Characteristic Leachate Procedure (TCLP) using EPA SW-846 or equal EPA approved procedure. Subsamples should be taken from walls, windows, floors, ceiling, door frames, and other building components. (The subsamples are normally taken by using a 1-inch drill bit or similar device.) The size of each subsample will be based on the volume of that particular building component relative to the total volume of the anticipated debris. The composite sample must be thoroughly mixed before being analyzed for TCLP. If the test results are below the EPA limit of 5 ppm, the construction debris is considered non-hazardous and can be disposed of at a regular construction landfill (subtitle D). If the test results exceed 5 ppm, the construction debris will come under RCRA hazardous waste regulations and must be disposed of at an industrial landfill (subtitle C).

#### 1. Deliverables

Complete documentation of each survey and all test results are required along with mapping all homogeneous areas and the locations of all sample points to confirm lead-containing paint. Completed forms, field notes, photographs, and all other information including assessments, condition of the paint, and anticipated physical difficulties involved with any abatement action shall be part of the survey report. A photographic record may be used to determine the validity of the proposed corrective actions if deemed necessary. The work shall be conducted under a safety and health plan and in full compliance with all applicable safety and health, and worker protection laws. The survey report shall include as a minimum the following information:

- a. Name and certification documentation of Certified Lead Inspector.
- b. Qualifications of the laboratory.
- c. Types of test analyses conducted.
- d. Plan showing location of samples and homogeneous areas of lead containing paint including the estimated quantity.

- e. Photographs (if used).
- f. Results of both TCLP and total lead analyses in percent concentration of lead in paint and ppm TCLP.
- g. Recommended actions and a detailed cost estimate.

The A/E shall prepare comprehensive drawings and specifications as required for the removal and disposal of lead-containing paint.

**Appendix G.5 ASBESTOS SURVEYS****A. General**

The A/E shall perform an asbestos survey of all areas of the project to be demolished, renovated or disturbed in accordance with the requirements of 40 CFR 763 "Asbestos Hazard Emergency Response Act" (AHERA). An EPA certified asbestos inspector, meeting the accreditation requirements of 40 CFR 763 Subpart E (AHERA) and licensed by the State, shall conduct the survey and validate prior surveys. The results of the survey will be used for construction permitting and will be subject to inspection by federal, state and local agencies. Survey and abatement work shall be conducted under a safety and health plan and in full compliance with all applicable safety, health and worker protection regulations.

**B. Procedures**

The survey will incorporate prior survey information and supplemental testing as necessary and consist of the following four steps:

1. Review existing building records and drawings for references to ACM used in construction, renovation, or repairs. Obtain prior Asbestos Surveys from the activity Asbestos Program Manager or facility manager.
2. Validate prior surveys for the areas to be disturbed and incorporate into the new survey. The inspector shall verify that all suspected Asbestos Containing Material (ACM) has been identified, that site conditions have not changed, and that an adequate number of samples were collected and analyzed to meet 40 CFR 763.86 (AHERA Sampling) requirements. Prior positive results shall be accepted and no further testing is required. If prior results are negative for asbestos, but the number of samples for each suspect homogeneous area do not meet the AHERA sampling requirements, supplemental sampling shall be accomplished. Also ensure that all areas to be affected by the renovation or construction were inspected. "Affected areas" are those internal and external building areas in which renovation or construction activities will likely take place, including lay down areas, and areas in which utilities will be routed (ie; attics, crawl spaces, and above ceilings).
3. Inspect the affected areas in the building(s) to identify those materials that may contain asbestos. Sufficient homogenous areas will be identified to assure that all ACM is identified and documented. Suspect materials shall be tested to the greatest extent possible; however, when determined not practical to sample the material it shall be Presumed Asbestos Containing Material (PACM). The inspector shall document in writing any denial of a request to perform destructive tests. Include in the documentation the reason(s) for not testing and who denied the request. The inspector should seek permission to perform destructive testing from the highest authority available. The survey will include the identification of friable and non-friable ACM and PACM. The locations of all ACM will be determined, reported, and photographed. All floor tile, mastic, transite board, thermal insulation, roof flashing, and felts should be considered as PACM, unless testing proves otherwise.
4. Sample and test the suspected materials identified in Step 2 and 3 in accordance with AHERA Sampling requirements, except that at least three samples of each suspect material shall be taken. Samples will be taken of the various troweled or sprayed on

surfaces, pipes, and boiler insulation, tile, siding, shingles, and other suspect materials. A lab certified by the National Voluntary Laboratory Accreditation Program (NVLAP) using polarized light microscopy (PLM) will analyze samples in accordance with 40 CFR 763.87 (AHERA Analysis). Lab personnel performing sample analysis shall be EPA certified to perform asbestos analysis. When PLM analysis of a sample indicates asbestos content between 1 and 2 percent, the sample shall be point counted. The lab performing the analysis will document the results of each sample analysis.

### C. Deliverables

Prepare a report of the survey in accordance with 40 CFR 763.88 (AHERA Assessment) including paragraph (c) and containing the following items:

- a) Identification of prior asbestos surveys available for review by the contractor. Include a brief description of areas surveyed, the date of the survey, and the location where the survey is retained.
- b) A plan showing all homogenous locations of ACM and PACM, the estimated quantity, and sample points. Also note locations where removal of ACM will require temporary relocation of other systems, such as HVAC ducts and piping.
- c) The test results.
- d) Photographs as appropriate.
- e) Any other information, field notes, or forms which provide pertinent data.

The A/E shall prepare comprehensive design drawings and specifications as necessary for abatement of the ACM and PACM. The person preparing the asbestos plans and specifications shall meet EPA accreditation requirements of 40 CFR 763 Subpart E and licensed by the State in which the work is conducted. The design shall show the location(s) of all ACM and PACM and indicate the type and concentration of asbestos in each material. Prepare contract document 00300, Information Available to Bidders, and include the complete survey report as an attachment to this section. Provide an electronic copy of 00300 and the complete report on 3-½ inch disk with the final design submittal.

If no asbestos is found in the building, a finding of no asbestos must be included in the contract documents, with the complete survey report.

**Appendix G.6 PERMIT SUPPORT****A. General.**

The majority of projects covered by this guide will take place on Federal Property managed by the Coast Guard. As such, the Coast Guard acts as the "authority having jurisdiction" with regard to municipal or city building or zoning permits – and generally no such permits are required. However, since the Coast Guard is subject to the National Environmental Policy Act (NEPA), projects may require significant environmental review and approval at the Local, State and Federal level. When required by the SOW, the A/E shall complete a review of required permits and/or assist in the preparation, submittal and approval of permit applications.

**B. Permitting Plan.**

The A/E shall prepare an environmental plan that shall be coordinated with the project environmental assessment or environmental impact statement and shall include all applicable environmental issues and considerations relative to the project scope and site. The A/E shall coordinate through the EIC and FD&CC Environmental Specialist as necessary. The environmental plan shall also be coordinated with the Permit Record of Decision (see para. 3 below) and identify all required permits, notifications, approvals or easements that will be required. Provide names and addresses of permitting agencies and a time schedule for obtaining necessary permits and approvals. The schedule shall identify specific permit milestones (identification of permit requirements and applicable criteria, preparation of applications, obtaining permits) for each permit required in relation to the overall design schedule, with the goal of obtaining all permits prior to the final design submittal.

**C. Permitting Record of Decision.**

In identifying all required permits, the A/E shall prepare a Permit Record of Decision (PROD) which records the decisions made by the A/E regarding the requirement for any of the various types of permits which may be required in the state where the project is located. The PROD shall list permit special conditions and close-out requirements. The PROD shall be submitted with the first design submittal (schematic or PD) and revised as necessary and re-submitted with the final submittal.

**D. Permit Submissions.**

The A/E shall obtain all permits and approvals and provide all notifications that are required for the project by Federal, State and local agencies. All effort involved, including but not necessarily limited to preparing applications, obtaining owner/ government signatures, paying all application fees, submitting applications and notifications, coordinating with agencies and responding to their inquiries and comments, and obtaining permits, shall be the A/E's responsibility. Design of the project shall comply with all applicable requirements of the permitting agencies. Permit applications shall be signed and sealed by a professional engineer registered in the state where the project is located. Copies of permit applications

shall be submitted to the EIC at the time the applications are made and not later than the 100% submittal. Permits shall be submitted to the PM with the final design submittal.

**E. Permit Requirements.**

Design of the Project shall comply with all applicable environmental and storm-water laws, codes, and regulations and the requirements of permitting agencies. The A/E shall include within the contract specifications and drawings all applicable permit conditions and requirements, specifically addressing any and all close-out requirements.